



US005843259A

United States Patent [19]

Narang et al.

[11] **Patent Number:** **5,843,259**[45] **Date of Patent:** **Dec. 1, 1998**[54] **METHOD FOR APPLYING AN ADHESIVE LAYER TO A SUBSTRATE SURFACE**[75] Inventors: **Ram S. Narang**, Fairport, N.Y.;
Stephen F. Pond, Gainesville, Va.;
Timothy J. Fuller, Pittsford, N.Y.[73] Assignee: **Xerox Corporation**, Stamford, Conn.[21] Appl. No.: **703,138**[22] Filed: **Aug. 29, 1996**[51] **Int. Cl.⁶** **B32B 31/12**[52] **U.S. Cl.** **156/151**; 156/250; 156/273.9;
156/275.7; 204/489; 427/469[58] **Field of Search** 156/150, 151,
156/250, 273.9, 274.4, 275.7; 346/63, 68;
204/489, 492, 493, 507; 427/469[56] **References Cited****U.S. PATENT DOCUMENTS**

Re. 32,572	1/1988	Hawkins et al.	156/626
4,391,933	7/1983	Scala et al.	523/454
4,678,529	7/1987	Drake et al.	156/234
4,844,784	7/1989	Suzuki et al.	156/151
5,336,319	8/1994	Narang et al.	118/211

Primary Examiner—Michael W. Ball
Assistant Examiner—Michael A. Tolin[57] **ABSTRACT**

A method is described for uniformly coating portions of the surface of a substrate which is to be bonded to another substrate. In a described embodiment, the two substrates are channel plates and heater plates which, when bonded together, form a thermal ink jet printhead. The adhesive layer is electrophoretically deposited over a conductive pattern which has been formed on the binding substrate surface. The conductive pattern forms an electrode and is placed in an electrophoretic bath comprising a colloidal emulsion of a preselected polymer adhesive. The other electrode is a metal container in which the solution is placed or a conductive mesh placed within the container. The electrodes are connected across a voltage source and a field is applied. The substrate is placed in contact with the solution, and a small current flow is carefully controlled to create an extremely uniform thin deposition of charged adhesive micelles on the surface of the conductive pattern. The substrate is then removed and can be bonded to a second substrate and cured.

5 Claims, 5 Drawing Sheets